

Appl No.: 10/795,884

Atty. Dkt.
UCF287DIV

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-42 (Cancelled)

Claim 43 (Currently Amended). A method of producing short-wavelength electromagnetic emissions comprising the steps of:

providing a target comprising a metallic compound solution in a target zone; and
 irradiating the target with a high-energy source to form a plasma that generates electromagnetic emissions;

Claim 44 (Original). A method according to claim 43 wherein the target comprises a metallic compound dissolved in a solvent.

Claim 45 (Original). A method according to claim 43 wherein providing a target comprises forming droplets of the metallic compound solution.

Claim 46 (Original). A method according to claim 43 wherein the average target size in the range of about 10 microns to about 100 microns.

Claim 47 (Currently Amended). A method according to claim 43 wherein the step of providing a target is performed at a temperature in the range of about 10 degrees C to about 30 degrees C.

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Claim 48 (Original). A method according to claim 43 wherein the high-energy source is a laser.

Claim 49 (Original). A method according to claim 48 wherein the laser produces a laser beams having a diameter in the target zone that is substantially identical to the average target size.

Claim 50 (Original). A method according to claim 43 wherein the target comprises a metallic salt and a solvent.

Claim 51 (Original). A method according to claim 43 wherein the target comprises a metallic chloride and a solvent.

Claim 52 (Original). A method according to claim 51 wherein the metallic chloride is selected from the group consisting of zinc chloride, copper chloride, tin chloride, and aluminum chloride.

Claim 53 (Original). A method according to claim 43 wherein the target comprises a metallic bromide and a solvent.

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Claim 54 (Currently Amended). A method according to claim ~~253~~ 53 wherein the metallic bromide is selected from the group consisting of zinc bromide, copper bromide, and tin bromide.

Claim 55 (Original). A method according to claim 43 wherein the target comprises a metallic sulfate and a solvent.

Claim 56 (Original). A method according to claim 55 wherein the metallic sulfate is selected from the group consisting of zinc sulfate, copper sulfate, and tin sulfate.

Claim 57 (Original). A method according to claim 43 wherein the target comprises a metallic nitrate and a solvent.

Claim 58 (Original). A method according to claim 57 wherein the metallic nitrate is selected from the group consisting of zinc nitrate, copper nitrate, and tin nitrate.

Claim 59 (Original). A method according to claim 43 wherein the target comprises an organo-metallic compound and a solvent.

Claim 60 (Original). A method according to claim 59 wherein the organo-metallic compound is selected from the group consisting of bromoform, diiodomethane, selenium dioxide, and zinc dibromide.

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Claim 61 (Original). A method according to claim 43 wherein the short-wavelength electromagnetic emissions have a wavelength of about 11 nanometers.

Claim 62 (Original). A method according to claim 43 wherein the short-wavelength electromagnetic emissions have a wavelength of about 13 nanometers.

Claim 63 (Original). A system for producing short-wavelength electromagnetic emissions comprising:
a vacuum chamber;
a target dispenser connected to the vacuum chamber and configured to dispense targets comprising ametallic compound solution into a target zone; and
a focusing device in fixed relation to the target chamber, wherein the focusing device is operable to focus a high energy source onto the target zone.

Claim 64 (Currently Amended). A system according to claim 63, further comprising:
a precision adjustment unit coupled with the target dispenser, wherein the precision adjustment unit is operable to adjust a position of the target zone in three orthogonal dimensions.

Claim 65 (Currently Amended). A system according to claim 63, further comprising:
a collector mirror disposed in the vacuum chamber and which is operable to reflect the short wavelength electromagnetic emissions.

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Claim 66 (Currently Amended). A system according to claim 63, further comprising:
a cryogenic trap disposed in the vacuum chamber and operable to collect targets
that are not irradiated by the high energy source.

Claim 67 (Original). A system according to claim 63 wherein the focusing device is a
lens.

Claim 68 (Currently Amended). A system according to claim 63 wherein the average
target size has a in the range of about 10 microns to about 100 microns.

Claim 69 (Original). A system according to claim 63 wherein the high energy source is a
laser.

Claim 70 (Currently Amended). A system according to claim 45-63 wherein the laser is
configured to produce a laser beam having a diameter in the target zone that is
substantially identical to the average target size.

Claim 71 (Original). A system according to claim 63 that is operable to provide targets
in liquid form in a temperature range from about 10 degrees centigrade to about 30
degrees centigrade.